

# PATENT SPECIFICATION

Inventor: CHARLES SHELDON-WILLIAMS

779,014



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## COMPLETE SPECIFICATION

### Improvements in or relating to Platforms made of Pasteboard, Corrugated Cardboard, or the like Material

We, REED CORRUGATED CASES LIMITED, (formerly known as The Thompson and Norris Manufacturing Company Limited), a British Company, of Great West Road, Brentford, Middlesex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to platforms made of pasteboard, corrugated cardboard or the like material.

In accordance with the present invention there is provided a platform made of fibrous sheet material such as cardboard, pasteboard, or double-faced corrugated cardboard and comprising a flat panel or deck and a plurality of spaced supporting blocks secured to, and extending from, one side of the panel, each supporting block comprising a hollow box assembled from a blank of the material and having at one end outwardly extending flange-like portions which engage and are connected to said panel or deck.

According to a further feature of the invention, diagonally disposed members of the sheet material may be arranged within the box of each supporting block, the diagonal sheets extending in planes substantially at right-angles to the panel to provide an internal reinforcement for the block.

For a better understanding of the invention and to show how it may be carried into effect, alternative embodiments thereof will now be described with reference to the drawings accompanying the Provisional Specification, in which:—

Figure 1 is an underside plan view of the top panel or deck for use in the assembly of a platform according to one embodiment of the invention, and intended more particularly for use as a load-carrying pallet.

Figure 2 is a development of a blank for forming a box-like supporting block, several

of which blocks are secured to the panel of Figure 1 to form the platform,

Figure 3 is a detail of a partition member,

Figure 4 is a fragmentary perspective view showing the assembly of the platform, and

Figure 5 is an underside plan view of a blank for the formation of a platform according to an alternative embodiment of the invention.

Referring to Figures 1 to 4, the platform comprises a flat rectangular top panel or deck formed of two layers 1, 2 of double-faced corrugated cardboard which, during assembly of the platform, are secured together in face-to-face relation, as by wire staples 3. The underside of the deck is formed with a plurality of square recesses which are spaced apart in substantially parallel rows each recess being defined by score lines 4, 5 and diagonal cuts 6, made in the lower layer 2 of the deck, to produce triangular tabs 7 adapted to be bent outwardly to reveal apertures in the layer 2. The upper layer 1 of the deck is plain and will thus cover the apertures in the lower layer to form the recesses.

In each of the recesses, there is mounted a supporting block constituted by a hollow box produced by the folding of a one-piece blank 8 of double-faced corrugated cardboard, which blank is cut and scored in the manner illustrated in Figure 2. The blank 8 is cut and scored horizontally and vertically to define a square bottom panel 9 to which four outer side-wall panels 10, 11, 12 and 13 are hinged. These outer side-wall panels are also square and of substantially the same size as the bottom panel 9. Each of the outer side-wall panels 10 to 13 have along one side a hinged panel 14, 15, 16 and 17, respectively, adapted in the assembled box to form an inner side wall thereof. The two pairs of adjacent panels 10, 14 and 12, 16, are provided with hinged flaps 18 adapted to be bent into positions extending outwardly from the open end of the

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box to facilitate attachment thereof to the top deck of the platform. In Figure 2, each dotted line represents a score for an inward fold, i.e. a fold made by bending the parts of the blank, on either side of the score line, upwardly from the plane of the drawing, while each chain line represents a score for a fold in the opposite direction. By folding the blank along the score lines in the manner indicated, there is produced a double-walled box of substantially cube-form, the flaps 18 extending outwardly in the form of flanges, from the upper ends of the associated side-walls. The cutting and scoring of the blank is such that the flutes of the intermediate corrugated layer of the material extend in the direction indicated by the arrow A in Figure 2.

As indicated in Figure 2, the width of each inner side-wall panel 14, 15, 16 and 17, is slightly less than the corresponding dimension of the associated outer-side wall panel 10, 11, 12 and 13, so as to allow for the thickness of the blank and to permit the walls to be bent upwardly into planes substantially at right-angles to the bottom panel 9, when the box is assembled. Moreover, the score lines along which the flaps 18 are hinged to their associated side-wall panels, are inclined slightly so that in the assembled box, the flaps can be folded outwardly into a plane substantially parallel to the plane of the bottom of the box. The box is held in assembled position by means of wire staples 21 (Figure 4).

Each box is adapted to be reinforced internally by a pair of diagonally disposed partition members each formed of double-faced corrugated cardboard as shown at 19 in Figure 3. Each partition is formed with a slot 20 so that the two partitions can be nested in interlocking relation within the box with the flutings of the intermediate layer of each partition extending in a direction from top to bottom of the box, as shown in Figure 4.

In assembly of the platform, each of the assembled boxes of the supporting blocks is passed through an aperture in the lower layer 2 of the deck and two interlocking partition members 19 are arranged diagonally in each box. The flaps 18 are then folded over and secured by glue or by wire staples to the upper face of the layer 2. The upper layer 1 of the deck is then applied to the lower layer and the whole assembled together and completed by stitching with the wire staples 3. The triangular portions 7 which are folded back to form the apertures in the lower layer of the deck, may be secured as by an adhesive, to the adjacent faces of the supporting blocks.

In the modified embodiment illustrated in Figure 5, the deck of the platform is constituted by a rectangular sheet of double-faced corrugated cardboard cut and scored to provide a main top panel 22 having along its

longitudinal side edges hinged marginal parts 23, and having also along its transverse edges similar hinged marginal parts 24. Each of the parts 23 has at its opposite ends tabs 25 and the arrangement is such that the parts 23, 24 may be folded into positions to form a peripheral flange around the four sides of the main panel 22, the adjacent end portions of the parts 23 and 24 being connected by stapling through the tabs 25.

The underside of the main panel 22 is marked with parallel rows of squares 26 which define the positions to which supporting blocks are secured.

In this modified arrangement, the supporting blocks are identical with those of the first embodiment, and are formed from one-piece blanks of double-faced corrugated cardboard as described with reference to Figure 2. After insertion in the supporting blocks of the reinforcing partitions 19, the blocks are secured in the appropriate positions by means of an adhesive applied to the upper faces of the flaps 18 and these are secured to the underside of the top panel 22.

If desired, the deck of the second embodiment may comprise two layers of double-faced corrugated material, these layers being secured together in face-to-face relation by an adhesive or by wire staples.

It will be appreciated that in either of the described embodiments, the deck may consist of more than two layers, and adjacent layers of the composite deck may be disposed so that their corrugations extend in directions at right-angles to each other. The free ends of the supporting blocks may be secured to a flat panel or lower deck formed of fibrous sheet material such as double-faced corrugated cardboard.

By appropriate arrangement of the rows of supporting blocks the platforms are eminently suitable for use as pallets for the transport of materials by load-handling trucks of the fork-lift type.

What we claim is:—

1. A platform made of fibrous sheet material such as cardboard, pasteboard or double-faced corrugated cardboard and comprising a flat panel or deck and a plurality of spaced supporting blocks secured to, and extending from, one side of the panel, each supporting block comprising a hollow box assembled from a blank of the material and having at one end outwardly extending flange-like portions which engage and are connected to said panel or deck.

2. A platform as claimed in claim 1, wherein the panel or deck is comprised of two or more layers of sheet material fastened together.

3. A platform as claimed in claim 1 or 2, wherein each supporting block is mounted in a recess formed in the flat panel or deck.

4. A platform as claimed in claim 3 as appended to claim 2, wherein each recess is defined by an aperture cut in the lowermost

layer at least of the panel or deck, the apertured layer or layers being covered by one or more superjacent uncut layers.

5 5. A platform as claimed in claim 4, as appended to claim 2, wherein each block is secured within its recess with the flange-like portions of the block interposed between the apertured layer or layers of the panel or deck and the adjacent uncut layer or layers thereof.

10 6. A platform as claimed in claim 3 as appended to claim 2, wherein the recesses are formed by cuts made in the lower layer of the panel or deck to produce tabs which are folded outwardly from said lower layer to reveal apertures defining the recesses, and wherein said tabs are secured to the blocks mounted in the recesses.

20 7. A platform as claimed in any one of the preceding claims, wherein reinforcing members are disposed in the box of each supporting block.

25 8. A platform as claimed in claim 7, wherein the reinforcing members comprise a pair of interlocking pieces of sheet material arranged vertically in the box and extending substantially diagonally thereof.

30 9. A platform as claimed in any one of the preceding claims, wherein the box of each supporting block is formed from a one-piece blank of sheet material cut and scored to define a bottom wall panel provided along each side edge with a hinged panel adapted to form an outer side wall of the box, each of said outer side wall panels carrying a hinged flap adapted to form an inner wall of the box, the outer side wall panels connected to two

opposite edges of the bottom wall and the inner side wall flaps hinged to said two outer side wall panels, being provided with flaps adapted to constitute the flange-like portions of the box, the arrangement being such that the box assembled from the blank is formed with doubled side walls.

40 10. A platform as claimed in any one of the preceding claims, wherein the panel or deck is formed with a peripheral flange.

50 11. A platform as claimed in any one of the preceding claims, wherein the supporting blocks are arranged in substantially parallel and spaced apart rows to permit the platform to be used as a load-carrying pallet for the transport of materials by load-handling trucks of the fork-lift type.

55 12. A platform as claimed in any one of the preceding claims, wherein the free ends of the supporting blocks are secured to a flat panel or lower deck formed of double-faced corrugated cardboard, or the like fibrous sheet material.

60 13. A platform as claimed in claim 1, wherein the box of each supporting block is formed from a blank substantially as illustrated in Figure 2 of the drawings accompanying the Provisional Specification.

65 14. A platform or load-carrying pallet according to either one of the embodiments hereinbefore described and illustrated in the drawing accompanying the Provisional Specification.

70  
HASELTINE, LAKE & CO.,  
28, Southampton Buildings, London, W.C.2,  
Agents for the Applicants.

#### PROVISIONAL SPECIFICATION

#### Improvements in or relating to Platforms made of Pasteboard, Corrugated Cardboard, or the like Material

75 WE, THE THOMPSON AND NORRIS MANUFACTURING COMPANY LIMITED, a British Company, of Great West Road, Brentford, Middlesex, do hereby declare this invention to be described in the following statement:—

This invention relates to platforms made of pasteboard, corrugated cardboard or the like material, and is an improvement in or modification of the invention forming the subject of Patent No. 697,232.

80 In accordance with the present invention there is provided a platform made of pasteboard, corrugated cardboard or the like foldable sheet material, and comprising a flat panel or deck and a plurality of spaced supporting blocks secured to, and extending from, one side of the panel, each supporting block comprising a hollow box formed by the folding of a blank of the foldable sheet material, and each box including portions which engage and are connected to the panel.

90 According to a further feature of the in-

vention, diagonally disposed sheets of the sheer material are arranged within the box of each supporting block, the diagonal sheets extending in planes substantially at right-angles to the panel to provide an internal reinforcement for the block.

100 For a better understanding of the invention, alternative embodiments thereof will now be described with reference to the accompanying drawings, in which:—

Figure 1 is an underside plan view of the top panel or deck for use in the assembly of a platform according to one embodiment of the invention, and intended more particularly for use as a load-carrying pallet.

Figure 2 is a development of a blank for forming a box-like supporting block, several of which blocks are secured to the panel of Figure 1 to form the platform.

Figure 3 is a detail of a partition member,

Figure 4 is a fragmentary perspective view showing the assembly of the platform, and

Figure 5 is an underside plan view of a blank for the formation of a platform according to an alternative embodiment of the invention.

5 Referring to Figures 1 to 4, the platform comprises a flat rectangular top panel or deck formed of two layers 1, 2 of double-faced corrugated cardboard which, during assembly of the platform, are secured together  
10 in face-to-face relation, as by wire staples 3. The underside of the deck is formed with a plurality of square recesses which are spaced apart in substantially parallel rows, each recess being defined by score lines 4, 5 and diagonal cuts 6, made in the lower layer 2 of the  
15 deck, to produce triangular tabs 7 adapted to be bent outwardly to reveal apertures in the layer 2. The upper layer 1 of the deck is plain and will thus cover the apertures  
20 in the lower layer to form the recesses.

In each of the recesses, there is mounted a supporting block constituted by a hollow box produced by the folding of a one-piece blank 8 of double-faced corrugated cardboard, which blank is cut and scored in the manner illustrated in Figure 2. The blank 8 is cut and scored horizontally and vertically to define a square bottom panel 9 to which four outer side-wall panels 10, 11, 12 and 13 are hinged.  
25 These outer side-wall panels are also square and of substantially the same size as the bottom panel 9. Each of the outer side-wall panels 10 to 13 have along one side a hinged panel 14, 15, 16 and 17, respectively, adapted  
30 in the assembled box to form an inner side wall thereof. The two pairs of adjacent panels 10, 14 and 12, 16, are provided with hinged flaps 18 adapted to be bent into positions extending outwardly from the open end of the  
40 box to facilitate attachment thereof to the top deck of the platform. In Figure 2, each dotted line represents a score for an inward fold, i.e. a fold made by bending the parts of the blank, on either side of the score line, upwardly from the plane of the drawing, while  
45 each chain line represents a score for a fold in the opposite direction. By folding the blank along the score lines in the manner indicated, there is produced a double-walled box of substantially cube-form, the flaps 18 extending outwardly from the upper ends of the associated side-walls.

As indicated in Figure 2, the width of each inner side-wall panel 14, 15, 16 and 17, is  
55 slightly less than the corresponding dimension of the associated outer-side wall panel 10, 11, 12 and 13, so as to allow for the thickness of the blank and to permit the walls to be bent upwardly into planes substantially at right-angles to the bottom panel 9, when the box is assembled. Moreover, the score lines along which the flaps 18 are hinged to their associated side-wall panels, are inclined slightly so that in the assembled box, the flaps  
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stantially parallel to the plane of the bottom of the box. The box is held in assembled position by means of wire staples 21 (Figure 4).

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In assembly of the platform, each of the assembled boxes of the supporting blocks is passed through an aperture in the lower layer 2 of the deck and two interlocking partition members 19 are arranged diagonally in each box. The flaps 18 are then folded over and secured by glue or by wire staples to the upper face of the layer 2. The upper layer 1 of the deck is then applied to the lower layer and the whole assembled together and completed by stitching with the wire staples 3. The triangular portions 7 which are folded back to form the apertures in the lower layer of the deck, may be secured as by an adhesive, to the adjacent faces of the supporting blocks.

In the modified embodiment illustrated in Figure 5, the deck of the platform is constituted by a rectangular sheet of double-faced corrugated cardboard cut and scored to provide a main top panel 22 having along its longitudinal side edges hinged marginal parts 23, and having also along its transverse edges similar hinged marginal parts 24. Each of the parts 23 has at its opposite ends tabs 25 and the arrangement is such that the parts 23, 24 may be folded into positions to form a peripheral flange around the four sides of the main panel 22, the adjacent end portions of the parts 23 and 24 being connected by stapling through the tabs 25.

The underside of the main panel 22 is marked with parallel rows of squares 26 which define the positions to which supporting blocks are secured.

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If desired, the deck of the second embodiment may comprise two layers of double-faced corrugated material, these layers being secured together in face-to-face relation by an adhesive or by wire staples.

It will be appreciated that in either of the described embodiments, the deck may consist of more than two layers, and adjacent layers

of the composite deck may be disposed so of materials by load-handling trucks of the  
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right-angles to each other.

- 5 By appropriate arrangement of the rows of supporting blocks, the platforms are eminently  
suitable for use as pallets for the transport

HASELTINE, LAKE & CO.,

28, Southampton Buildings, London, W.C.2,

Agents for the Applicants.

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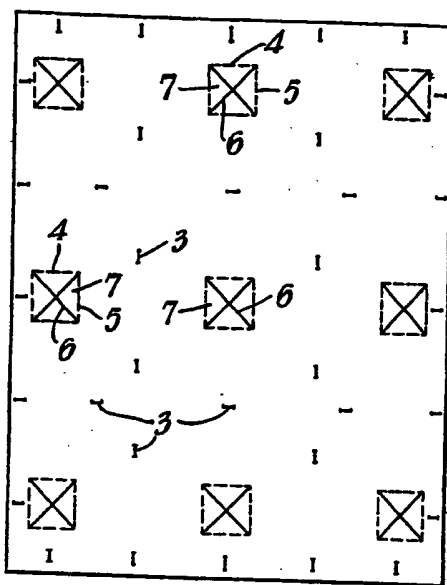


FIG. 1.

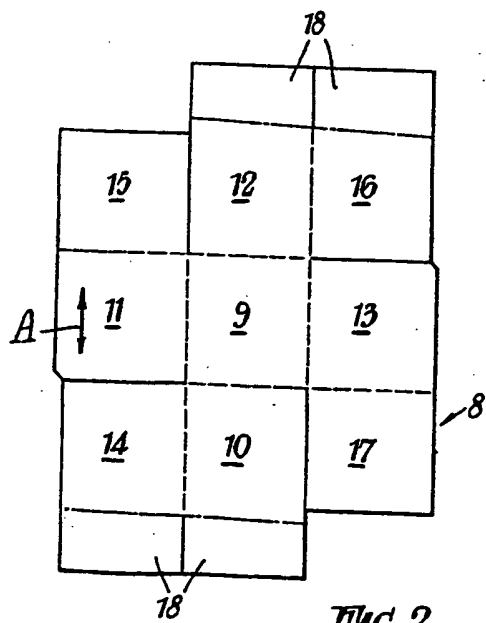


FIG. 2.

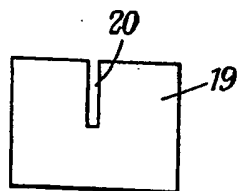
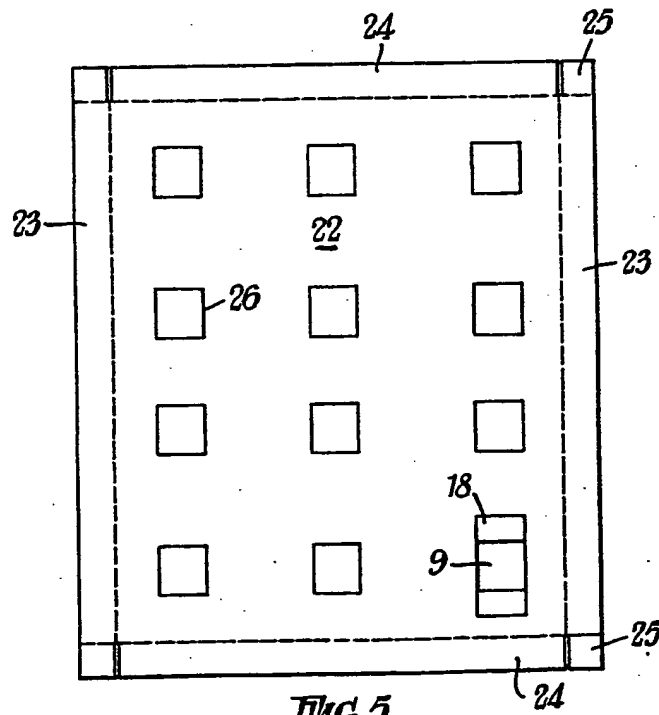
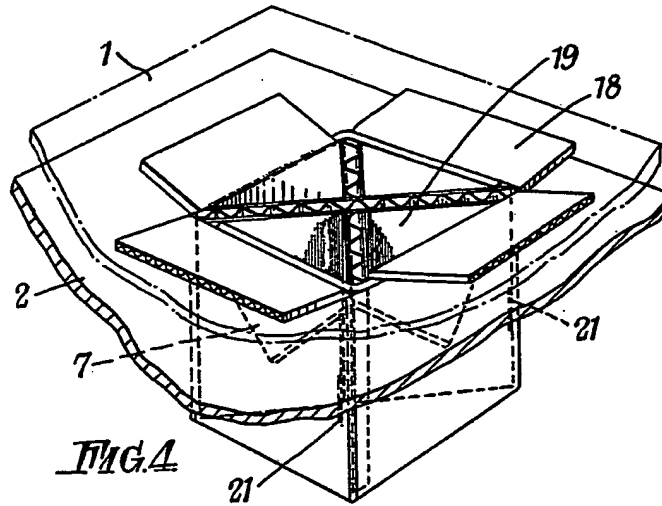


FIG. 3.



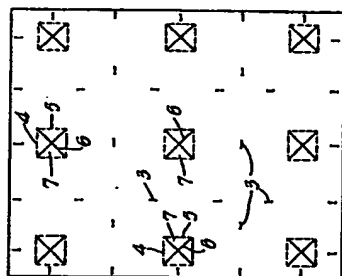


Fig. 1.

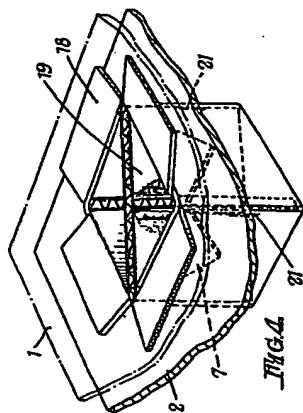


Fig. 4.

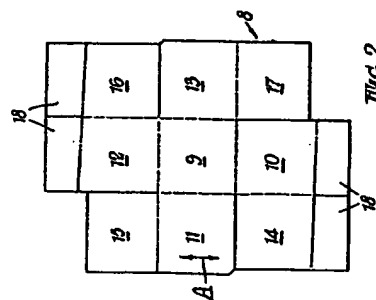


Fig. 2.

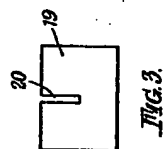


Fig. 3.

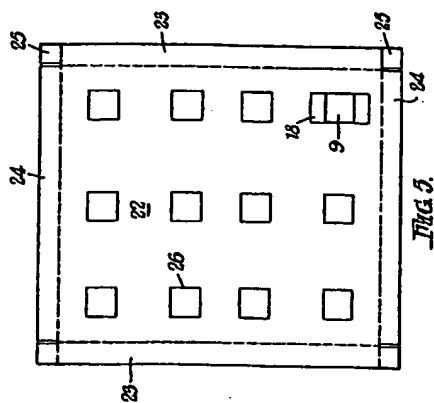


Fig. 5.



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